

HINTS FOR WRITING GRANTS

This document provides guidance for developing competitive grant proposals, as well as information about UTC budget policies and grant procedures. Contents include:

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NARRATIVE

The proposal narrative is usually the only means you have to tell funding agency reviewers about your project. Therefore, it needs to be carefully thought out and prepared. The narrative should capture the reviewers' attention and create a strong, positive impression of the usefulness and feasibility of your project. Office of Grants and Program Review staff can review drafts and provide feedback to help make your proposal a dynamic, convincing, and cohesive document. What follows is a description of the typical components of a proposal and hints on how to write them.

NEEDS SECTION

The needs section is one of the most important parts of your proposal because it demonstrates the significance of your ideas for the investigation/solution of a particular problem. In order to provide rationale for the project, you must display evidence of the urgency and extent of the problem(s) you propose to solve. When writing the needs section, think about answering the following questions:

- What specific problem or need does this project address?
- How was this need or problem identified? (document relevant research, statistics, requests from clients, other organizations, and so on)

- Who is affected by this problem? (describe demographic information of the ones who need this problem solved or implications for a research/teaching area).
- What unfortunate events will occur or continue if this grant is not awarded?

PROBLEM STATEMENT

A good problem statement has well documented statistics, is related to the mission and goals of the funder, states a well defined need within reasonable geographic dimensions, and is written clearly and concisely from the client or community's point of view. When writing a problem statement, focus on details which support the problem you propose to solve.

Instead of writing a general statement which lacks evidence and clear definition:

"There is a need to redesign math and science education in American schools."

Write a statement which supports its own assertion:

"The need to redesign math and science education in American schools as indicated by the following facts: a) few students plan to pursue a science-related career (by the 12th grade, only one out of four boys and one out of ten girls express preference for a science-related career - National Science Board, 1991); b) college graduation rates are generally poor (graduate rate for all students are just barely over the 50% mark, and are much worse for black students - American Council on Education, 1993); c) minorities and women are underrepresented in science and math degree programs and professions (despite the gains women have made in the last decade, only about 6% of doctoral women were either computer specialists or engineers in 1989 and blacks accounted for only 1.6% of all employed doctoral scientists and engineers in the same year - National Science Board, 1991)."

GOALS AND OBJECTIVES

In this section you indicate to the readers how the current situation will be changed when your proposal is implemented. Depending on the funds for which you are applying, you may be required to write goals, objectives, or both.

- **Goals** are the ultimate results of the project, sometimes unreachable in the short-term. They are usually written in broad-based statements which predict the results of changes being undertaken.
- **Objectives**, however, are measurable, time-specific results that you expect to accomplish as part of the grant. They are based on realistic expectations and are more narrowly defined than goals.

Thus, when writing goals answer the following:

- What impact does the problem have?
- Does it have national, regional and/or local significance?
- What are the benefits to the community if the problem is solved?
- What will happen if the problem is not solved?

Example of well-written goal:

- The main goal of the Regional Center is to increase the number of low income, first generation college students who successfully complete postsecondary study with majors in mathematics, engineering, science, and/or computer technology.

When writing objectives, address the following:

- State objectives in quantifiable terms
- Describe the outcomes
- Include only one result per objective
- Clearly identify the group benefiting from the planned project
- Include statements that are realistic and capable of being accomplished
- Do not describe methods

Examples of well-written objectives:

- To increase by at least five percent the SAT scores of fifty (50) low-achieving students by the end of the SAT tutoring series.
- To ensure that at least ten percent of minority students in the chemistry program enroll in graduate programs leading to the doctorate degree upon completion of their undergraduate studies.

Goals and objectives are often confused with methods. As the examples indicate, goals and objectives specify **WHAT** you want to accomplish. Methods indicate **HOW** you will accomplish what has been proposed. If an objective is poorly written, you will be unable to adequately devise a means to evaluate it. Therefore, when writing objectives think about how you will evaluate them.

PLAN OF OPERATION/METHOD

In this section you provide a detailed description of the activities which will be implemented in order to achieve the ends specified in the objectives. Common components in a plan of operation/methods section include activities, staff responsibilities, start and finish dates, and how participants will be selected. Basically, you are providing answers to the following questions:

- What activities need to take place in order to meet the objectives?
- What are the start and finish dates for the activities?
- Who has responsibility for completing each activity?
- How will participants be selected?
- What factors determine the suitability of your methodology?
- Does this project build on models already in existence? if not, how is it superior?
- What facilities and equipment will be required to conduct the activities?

Quite often you are required to explain the rationale for choosing your methods. Talk in terms of research findings, expert opinions, organizational experience with similar programs, and results from similar programs at other institutions. It is important to tie methods directly to the proposal objectives and to the problem/need statements. Present the activities which accomplish a specific objective in the same order that the objective is presented. Objective one will correspond to activity one, objective two to activity two, and so on. Tables are helpful to use in developing comprehensive and orderly project methods.

A typical table is shown below:

Objective	Activity	Responsible Person	Start Date	End Date	Evaluation
To increase the SAT scores of 50 low-achieving students by at least five percent.	Individual SAT tutoring series	Tom Brown	5/1/97	6/30/97	SAT retest and review of new scores.

EVALUATION

In the evaluation section you will describe tools and procedures used in determining whether the objectives have been achieved and the methods were appropriate. You will also identify the person(s) who will conduct the evaluation and describe their expertise in the area. When writing the evaluation section, think about answering the following:

- How will you know if the program accomplishes what was expected?
- What information indicates whether the methods you used had an effect on the problem?
- Is an impact made on the identified need?
- How will you obtain feedback from the target group and others?
- What methods will you use for data collection?
- What instruments will you use for data collection?

If you have trouble determining how to evaluate the project, you may need to rewrite the objectives. Evaluation difficulties are often rooted in weak or immeasurable objectives.

COSTS/BUDGET

Once you have your program designed, you are ready to develop a budget. The budget will define all of the costs necessary to successfully complete program activities and services. Most funding agencies have a limit on the amount of funding you can obtain. So, you will need to keep this in mind as you develop your program and associated costs. Descriptions of typical budgetary categories are listed below.

DIRECT COSTS

Direct costs are those which can be specifically documented. Examples include long-distance phone expenses, a person's salary, or the cost of a computer. It is easy to determine the exact amount spent for these types of costs. The concepts of "direct" and "indirect" (F&A) costs are new ones to many grant writers. Both are real costs vital to the success of a project but are fundamentally different from one another in documentation.

Typical Direct Costs:

I. Personnel

A. Professional Staff (Project Director, Assistant Director, Research Specialist)

- The Grants office is available to provide advice and guidance on appropriate policies and procedures regarding faculty/staff commitments for work on grant programs.
- As a general rule, the Project Director (the faculty/staff member who will be serving as the leader on the program) and any other faculty/staff member who will have a significant role in the program should budget for release time/salary savings. This means that you should charge the grant for the amount of effort that you will spend working on the grant program.

Examples:

- If a staff member will spend 50% effort on the program (his/her normal job responsibilities will be reduced by 50% during the grant program), you would charge the funding agency for 1/2 of the staff member's salary. The university would continue to pay for 1/2 of the staff member's salary, and the grant would pay for 1/2 of the staff member's salary.
- If a faculty member will require release from one course throughout the academic year to perform grant activities, you request 25% of the faculty member's salary (12.5% effort per semester). The university would continue to pay for 75% of the faculty member's salary and the grant would pay for 25% of the salary.
- Since faculty members are nine month appointments, work performed during the summer would be considered extra service compensation. University policy allows a faculty member to earn up to 33% of their regular salary during the summer, if they are not teaching. If some courses are being taught, this percentage will have to be adjusted accordingly. The Grants office will be happy to help you with these calculations.
- Twelve month appointments (staff) cannot earn extra compensation during the academic year or summer unless annual leave is taken.

B. Clerical/Support Staff (Secretary, Data Entry Specialist)

C. Fringe Benefits (includes the employer's share of social security, unemployment insurance, health plans, and retirement plans).

- For all FTE's of 75% and greater, the fringe benefit rate is 32% of salaries.
- For FTE's less than 75%, the fringe benefit is 8%

II. Non-Personnel

A. Operating Expenses

1. Duplicating/printing
2. Consumable supplies: usually defined as items costing less than \$500 or as items consumed during a budget period (reference books, manuals, pens, calculators, answering machines, computer software, office furniture).
3. Communications: Postage, telephone, shipping, fax
4. Other necessary expenses (equipment rental, space rental, etc.)

B. Travel

1. Local travel is typically based on a per mile rate (\$0.32/mile).
2. Non-local travel
 - a. **Transportation costs** (airfare, train, car, etc.) from your home base to the destination
 - b. **Lodging:** Be sure to include the cost of the room plus any taxes. Lodging expenses can vary widely from city to city. The University has established rates for lodging. Please refer to the university travel policy which can be found at:
<http://admin.tennessee.edu/uwa/to/toc.htm>
 - c. **Meals:** The University has established per diem amounts for meals. The rates are as follows:
 - In Tennessee (\$34.00/Full Day, \$25.50/Partial Day)
 - Outside Tennessee (\$44.00/Full Day, \$33.00/Partial Day)
 - International Travel (\$44.00/Full Day, \$33.00/Partial Day)

Note: Different rates are applied to one-day travel, over night travel (only a one-night stay). For information on those rates, please go to the university travel web site at:
<http://admin.tennessee.edu/uwa/to/toc.htm>
 - d. **Registration fees** (for meetings or conferences)
 - e. **Other expenses associated with travel** (parking, car rental, taxis)

C. Equipment:

- Usually defined as items costing over \$500 or as items with a lifetime longer than one year, that is, items which are not used up (consumed) during a budget period (computers, typewriters, vehicles, scientific or analysis/testing machinery).

D. Contractual Services:

- People not on the regular payroll who perform one-time or infrequent services in support of the program. (Guest speakers, consultants, etc.)

E. Other:

- Program costs that can't be categorized elsewhere (i.e.- stipends for program participants)

INDIRECT COSTS

Indirect costs are those costs which cannot be easily identified as being specific to a particular project. Examples of indirect costs include utilities, maintenance of project space and equipment, security, computer services, legal services, accounting services, and payroll services. If there were no heating/cooling, lights, power, or security for the project's workers and equipment it would be impossible to operate.

Indirect costs are real costs important to include in a grant budget, but they are difficult to calculate. What exactly are the utilities costs associated with the maintenance of a research laboratory during project hours?

UTC'S Indirect Cost Rate:

The University periodically negotiates an indirect cost rate. Presently, UTC's rate is 47% of the salaries and wages associated with the grant project. (Off-campus projects are calculated at 16.8%.) While these real costs need to be budgeted into a grant proposal, UTC is usually willing to work within the limits on indirect costs that some grant agencies set forth.

UTC'S Indirect Cost Distribution: Indirect cost recoveries are distributed as follows:

- 50% general administration
- 40% project director's department
- 5% project director's dean
- 5% Office of Grants and Research.

These funds are not restricted and may be used for any legitimate university purpose. Most departments return at least some of these indirect cost recoveries to the project director.

Note: It is anticipated that indirect cost allocations will not be distributed during fiscal year 2004 because of budgetary constraints.

FRINGE BENEFITS

Calculate fringe benefits as 32% of salaries and wages for regular university employees and 8% of wages (stipends are included but tuition is not) for student employees and non-UTC personnel. This covers the University's portion of social security, unemployment/worker's compensation, retirement, and health insurance.

Fringe Benefit Breakdown

- 7.65% Social Security
- 0.54% Unemployment/Worker's Compensation
- 15.52% Retirement
- 8.59% Health
- **32% Total**

COST SHARING AND MATCHING

Cost Sharing: A funding agency may require that the applicant pay a portion of the total cost for the program. This is what is known as "cost-sharing".

Why share costs? Often an agency is unable or unwilling to bear the entire cost of a project. When this occurs, the agency will usually specify the amount of costs to be shared, i.e. matching.

Matching is a form of cost sharing and can take the form of a cash or an in-kind match. Generally, a specific percentage is stipulated, often a 50% match. Thus, if a funding source provided \$150,000, the university (or another secondary source) would be required to provide an additional \$150,000 towards the project. Receiving the award is dependent upon meeting the required match.

- **Cash Match:** If cash matching is stipulated, usually only new dollars (those not committed to another program or project) are allowed.
- **In-Kind Match:** A variety of non-cash contributions are available when allowed. Faculty release time, administrative or clerical assistance, waived indirect cost, equipment maintenance, lease of special research facilities or equipment, and other budget items provided by the university or other sources are viable components of a matching program.

When should you Cost Share? Cost-sharing should only be included in a budget when required by the funding agency.

EXAMPLE OF A BUDGET PROPOSAL

Budget Summary			
Category	Grant Award	UTC Cost Share	Total
I. Personnel			
A. Project Director 0.25 FTE during AY (AY Salary \$50,000)	\$12,500	0	\$12,500
B. Secretary (100 hours @ \$12/hour)		\$1,200	\$1,200
C. Graduate Assistant			
▪ Stipend: \$2,750/semester @ 2 semesters	\$5,500	0	\$5,500
▪ Tuition: \$1,926/semester@ 2 semesters	\$3,852	0	\$3,852
D. Undergraduate Research Assistant (80 hrs @ \$10/hour)	\$800	0	\$800
II. Fringe Benefits			
A. 32% of salaries (full-time/UTC staff)	\$4,000	\$384	\$4,384
B. 8% of student salaries	\$504	0	\$504
III. Travel			
A. Project Director's meeting in Nashville			
▪ Mileage: 280 miles @ \$0.32/mile	0	\$89.60	\$89.60
▪ Lodging: 2 days @ \$70/night	0	\$140.00	\$140.00
▪ Meals: 2 days @ \$34/day	0	\$68.00	\$68.00
IV. Materials and Supplies			
A. General Office Supplies (\$10/month) and reference books, videotapes, and journals for resource library	\$500	0	\$500
V. Communications			
A. Long distance telephone calls to program staff in Nashville; postage to mail manuals (bulk rate)	\$200	0	\$200
VI. Printing			
A. 50 manuals @ \$10 each	\$500	0	\$500
VII. Total Direct Costs	\$28,356	\$1,882	\$30,238
VIII. Indirect Costs			
A. 47% of salaries	\$8,836	\$564	\$9,400
IX. Total Grant Request	\$37,192	\$2,446	\$39,638

ADDITIONAL CONSIDERATIONS

LETTERS OF COMMITMENT

Proposals often include letters from interested parties—individuals, businesses, schools, government, public agencies, etc. These letters indicate community involvement, verify need, or help establish the credibility of the project.

It is important to distinguish between "Letters of Support" and "Letters of Commitment." At their most fundamental level, **letters of support** proclaim that an interested party believes your project is worthwhile. A **letter of commitment** goes one step further: an interested party believes your project is so worthwhile that he or she (or the organization he or she represents) is willing to commit personnel or resources to it.

Some examples of commitment are:

- Cash donations
- The donation of supplies, equipment, or other goods
- Use of facilities or services (such as office space or computer service)
- Staff time devoted to a project

Letters of commitment demonstrate that the funding agency is not the only source of financial support for your project. These letters show the extent of support the project and institution have in the community. If letters of commitment are permitted by the funding agency, we encourage you to include them. They can be a powerful tool in convincing readers to fund your proposal.

INTERNAL APPROVAL

All grant proposals must be approved internally before being submitted to funding agencies for consideration. The Office of Grants and Program Review will work with you to prepare an *Internal Review Memo* (IRM) to document project details and approval by appropriate faculty and administrators.

The IRM typically includes the following:

- Start and end date of project
- Project summary, including details about AY and Summer release/extra service pay for all UTC project personnel
- Summary of expenses to be covered by the grant
- Detailed description of any cost-share committed to the project, including the source of cash and/or in-kind match
- Explanation of use of university space to conduct project activities, if applicable
- Human subjects research certification, if applicable
- **APPROVALS:** The IRM carries the signatures of the appropriate Department Head and Dean, the Director of Grants and Program Review, the Provost, and the Chancellor. Other approvals might be necessary if there are institutional contributions, space issues, etc.

LINKS FOR ADDITIONAL GRANT WRITING TIPS

Additional grant writing tips can be found at the following addresses:

- **NSF Guide for Proposal Writing:** www.nsf.gov/pubsys/ods/gtpub.cfm?nsf9891
- **NSF Step-by-Step Guide for Prospective Principal Investigators:**
<http://www.nsf.gov/home/programs/guide.htm>
- **The Corporation for Public Broadcasting's Basic Elements of Grant Writing:**
www.cpb.org/grants/handwriting.html
- **The Foundation Center, A Proposal Writing Short Course:**
<http://fdncenter.org/learn/shortcourse/prop1.html>
- **The Chronicle of Higher Education Career Network, *Debunking Some Myths About Grant Writing*:** <http://chronicle.com/jobs/2003/06/2003062601c.htm>

Evaluation resources can be found at:

- **NSF 2002 User-Friendly Handbook for Project Evaluation:**
<http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf02057>
- **NSF Online Evaluation Resource Library (OERL):** <http://oerl.sri.com/>
- **Field-Tested Learning Assessment Guide (FLAG) for Science, Math, Engineering, and Technology Instructors:** <http://www.flaguide.org/>

Additional sources of support: The Office of Grants and Program Review has additional sources available to assist you in learning how to develop a proposal. Please call our office at 425-4431 and one of our staff members will be available to assist you.